

*AMENDMENTS TO THE CLAIMS*

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (Currently Assigned) An acid liquid leakage sensor comprising:  
a first conductive member;  
a second conductive member; and  
an electrically insulating material which establishes an electrically insulating state between said first conductive member and said second conductive member,  
wherein

said electrically insulating material includes a macromolecular compound having a basic functional group, and

said electrically insulating material reacts with and is dissolved in a liquid acid,

said electrically insulating material has an electrical insulation characteristic such that the electrical insulation provided by said electrically insulating material decreases upon reaction with the liquid acid liquid, and

said macromolecular compound is a radically polymerized polymer containing repeating units derived from a monomer component having a basic functional group.

2. (Previously Presented) The acid liquid leakage sensor of Claim 1, wherein said macromolecular compound has a glass transition temperature, Tg, of at least 40°C.

Claim 3 (Cancelled).

4. (Currently Amended) The acid liquid leakage sensor of Claim 1, wherein said monomer component having a basic functional group includes at least 10% of all of the ~~radical polymerized monomers~~ repeating units which make up said macromolecular compound.

5. (Previously Presented) The acid liquid leakage sensor of Claim 1, wherein said electrically insulating material includes at least 10% of an extender.

6. (Original) The acid liquid leakage sensor of Claim 5, wherein said extender includes a metallic carbonate.

7. (Currently Amended) The acid liquid leakage sensor of Claim 1, wherein said second conductive member is made from a substance having an ionization tendency ~~is of a value~~ different from the ionization tendency possessed by the substance from which said first conductive member is made, and

when the electrical insulation characteristic of said electrically insulating material decreases, an electromotive force, which is generated between said first conductive member and said second conductive member, is detected.

8. (Previously Presented) The acid liquid leakage sensor of Claim 1, wherein said first conductive member is a first comb shaped electrode which comprises a common electrode member and a plurality of fine electrode members which extend from the common electrode member; and

said second conductive member is a second comb shaped electrode which comprises a common electrode member and a plurality of fine electrode members which extend from the common electrode member and are disposed between said fine electrodes of said first comb shaped electrode.

9. (Previously Presented) The acid liquid leakage sensor of Claim 8, wherein said first comb shaped electrode and said second comb shaped electrode are spaced apart by a gap which is at least 0.5 mm and no more than 8 mm.

10. (Currently Amended) The acid liquid leakage sensor of Claim 1, wherein said first and second conductive members are ~~made from~~ a printing material in which a metallic material selected from zinc, copper, iron, aluminum, tin, nickel, and magnesium, or a powder of said metallic material, is mixed with a resin which becomes a binder.

11. (Previously Presented) The acid liquid leakage sensor of Claim 1, further comprising notification means which operates by electrical conduction between said first conductive member and said second conductive member.

Claim 12 (Cancelled).

13. (Currently Amended) The acid liquid leakage sensor of Claim ~~12~~ 2, wherein said monomer component having a basic functional group includes at least 10% of all of the ~~radical polymerized monomers~~ repeating units which make up said macromolecular compound.

14. (Previously Presented) The acid leakage sensor of Claim 7, further comprising notification means which operates by the electromotive force between said first conductive member and said second conductive member.